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- downlink transmitter to transmit a first signal to a specific mobile station apparatus and transmitting a second signal to another mobile station apparatus with directivity different from that of said first signal;

directivity controller to change the directivity of said first signal based on this determination result of the determiner.

- wherein the determiner measures a transmission power ratio which is the ratio of the transmission power of the first signal to the transmission power of the second signal, measures a reception power ratio which is the ratio of the reception power of the first signal to the reception power of the second signal, and if the difference between said transmission power ratio and said reception power ratio is greater than a predetermined first threshold, determines that the directivity of said first signal should be changed.

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3. The base station apparatus according to claim 1, wherein, if the difference between said reception power ratio and said transmission power ratio is greater than

the predetermined first threshold and at the same time the mobile station apparatus to which the first signal was sent requests the transmission power to be increased, the determiner determines that the directivity of said first signal should be changed.

4. The base station apparatus according to claim 1, wherein, if the difference between said reception power ratio and said transmission power ratio is greater than the predetermined first threshold and at the same time the reception power of a signal transmitted from the mobile station apparatus to which the first signal was sent is smaller than a predetermined second threshold, the determiner determines that the directivity of said first signal should be changed.

5. The base station apparatus according to claim 1 comprising transmission power controller to control the transmission power of a transmission signal, said transmission power controller does not change the transmission power if the determiner determines that the directivity should be changed.

6. The base station apparatus according to claim 1, wherein, if the determiner determines that the directivity should be changed, the directivity controller changes the directivity orientation without changing the width of directivity.

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7. The base station apparatus according to claim 1,
wherein, if the determiner determines that the
directivity should be changed, the directivity

5 controller broadens the width of directivity by a certain
amount with respect to the width of the previous
directivity, adjusts the transmission power, changes the
directivity orientation and returns the width of
directivity to the original value.

8. The base station apparatus according to claim 1,
wherein, if the determiner determines that the
directivity should be changed, the directivity
controller broadens the width of directivity drastically,

15 changes the directivity orientation, adjusts the
directivity orientation and then returns the width of
directivity to the original value.

9. The base station apparatus according to claim 1,
20 wherein the determiner sets a third threshold greater
than the first threshold, and if the difference between
the reception power ratio and said transmission power
ratio is greater than the third threshold, determines
that the directivity shift of the first signal is greater,
25 and if the difference between the reception power ratio
and said transmission power ratio is greater than the
first threshold and smaller than the second threshold,
determines that the directivity shift of said first

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signal is smaller.

10. The base station apparatus according to claim 9,
wherein, if the determiner determines that the

5 directivity shift of the first signal is greater, the
directivity controller broadens the width of directivity
drastically to adjust the directivity, and if the
determiner determines that the directivity shift of said
first signal is smaller, does not change the width of
10 directivity but changes the directivity orientation.

11. The base station apparatus according to claim 9,
wherein, if the determiner determines that the

15 directivity shift of the first signal is greater, the
directivity controller broadens the width of directivity
and changes the directivity orientation, adjusts the
directivity and then returns the width of directivity
to the original value, and if the determiner determines
that the directivity shift of said first signal is
20 smaller, does not change the width of directivity but
changes the directivity orientation.

12. A mobile station apparatus comprising:

25 first measuring means for measuring the reception
power of a first signal transmitted from the base station
apparatus according to claim 1 to said mobile station;

second measuring means for measuring the reception
power of a second signal transmitted from the base

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station apparatus to other than said mobile station; and
uplink transmitter for transmitting the
measurement results of said first and second measuring
means to the base station apparatus.

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13. The mobile station apparatus according to claim 12
comprising reception power calculating means for
calculating a reception power ratio which is a ratio of
the reception power of the first signal to the reception
power of the second signal, wherein the uplink
transmitter transmits said reception power ratio.

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14. The mobile station apparatus according to claim 12,
wherein the reception power calculating means uses a
common signal applicable to any mobile station
apparatuses as the second signal.

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15. A radio communication method, wherein a base station
apparatus transmits a first signal to a specific mobile
station apparatus, at the same time transmits a second
signal to another apparatus other than said mobile
station apparatus with directivity different from that
of said first signal, said mobile station apparatus
measures the reception power of said first signal and
said second signal and transmits the measurement results
to the base station apparatus, said base station
apparatus measures a transmission power ratio which is
a ratio of the transmission power of said first signal

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to the transmission power of said second signal, measures a reception power ratio which is a ratio of the reception power of said first signal to the reception power of said second signal, determines whether the directivity of said first signal should be changed or not based on the difference between said transmission power ratio and said reception power ratio and changes the directivity of said first signal based on the determination result.

10 16. The radio communication method according to claim 15, wherein the mobile station apparatus that received the first signal calculates a reception power ratio and transmits it to the base station apparatus.

15 17. The radio communication method according to claim 16, wherein, if the difference between the transmission power ratio and reception power ratio is greater than a predetermined first threshold, the base station apparatus changes the directivity of the first signal.

20 18. The radio communication method according to claim 16, wherein, if the difference between the reception power ratio and transmission power ratio is greater than a predetermined first threshold and at the same time the

25 mobile station apparatus that received the first signal requests the transmission power to be increased, the base station apparatus changes the directivity of said first signal.

19. The radio communication method according to claim
16, wherein, if the difference between the reception
power ratio and transmission power ratio is greater than
5 a predetermined first threshold and at the same time the
reception power of a signal transmitted from the mobile
station apparatus that received the first signal is
smaller than a predetermined second threshold, the base
station apparatus changes the directivity of said first
10 signal.

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